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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/829,048	04/10/2001	Koichi Tamura	053969/0126	8333
22428	7590	07/11/2005	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			AHN, SAM K	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 07/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/829,048	Applicant(s) TAMURA ET AL.	
	Examiner Sam K. Ahn	Art Unit 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment, received on 03/02/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,4-7, 10,12-15, 18,20-23 and 25-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,4-7, 10,12-15, 18,20-23 and 25-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>51005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 2,4,5,7,8,10,12,13,15,16,18,20,21 and 23-30 is withdrawn in view of the newly discovered reference(s) to Chang. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 26,28 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Ottosson et al., USP 6,683,924 B1 (Ottosson, cited previously).

Regarding claims 26,28 and 30, Ottosson teaches a method of demodulating in a recording medium, and a demodulation apparatus for mobile communication having capability of cyclically selecting signals that meet a predetermined condition out of a plurality of incoming signals that travel via different paths, combining the incoming signals to obtain combined signals, and outputting the combined signals (see Figs.3 and 4, note col.5, line 67-col.6, line 2), comprising: threshold setting means (394); and signal selecting means (392')

for comparing each of the incoming signals, $r(k)$, with a threshold set by said threshold setting means and for selecting said incoming signals according to the result of said comparison even if said incoming signals do not meet said predetermined criterion (note col.18, lines 38-47, wherein although predetermined threshold is set, minimum criterion method is implemented regardless of whether the correlation result exceed the predetermined threshold). Ottosson further teaches wherein said signal selecting means selects said incoming signals if the respective levels of said incoming signals (signal strength, P_i) is equal to or above said threshold (A), (note col.17, lines 27-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6,14 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ottosson et al., USP 6,683,924 B1 (Ottosson, cited previously).

Regarding claims 6,14 and 22, Ottosson teaches all subject matter claimed, as applied to claim 1,9 or 17. Although Ottosson discloses a predetermined threshold, Ottosson does not explicitly teach wherein the threshold is a fixed value. However, at the time of the invention, it would have been obvious to a

person of ordinary skill in the art to set the threshold value as a fixed value.

Applicant has not disclosed that threshold being a fixed value provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with having a variable value because depending on the level of the power of the received signal, one may not want a power level to be below a certain level, and thus assign a fixed threshold value. Therefore, it would have been obvious to combine to one of ordinary skill in this art to modify Ottosson's predetermined threshold as a fixed value with to obtain the invention as specified in the claim.

4. Claims 2,4,5,7,10,12,13,15,18,20,21,23,25,27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ottosson et al., USP 6,683,924 B1 (Ottosson, cited previously) in view of Chang et al. USP 6,912,227 B1 (Chang).

Regarding claims 2,4,5,7,10,12,13,15,18,20,21,23,25,27 and 29, Ottosson teaches a method of demodulating in a recording medium, and a demodulation apparatus for mobile communication having capability of cyclically selecting signals that meet a predetermined condition out of a plurality of incoming signals that travel via different paths, combining the incoming signals to obtain combined signals, and outputting the combined signals (see Figs.3 and 4, note col.5, line 67-col.6, line 2), comprising: threshold setting means (394); and signal selecting means (392') for comparing each of the incoming signals, $r(k)$, with a threshold

set by said threshold setting means and for selecting said incoming signals according to the result of said comparison even if said incoming signals do not meet said predetermined criterion (note col.18, lines 38-47, wherein although predetermined threshold is set, minimum criterion method is implemented regardless of whether the correlation result exceed the predetermined threshold).

In regards to claims 2,5,7,10,13,15,18,21 and 23, Ottosson does not teach wherein said threshold setting means sets the threshold based on a correlation value information for said incoming signals selected in a previous cycle, wherein said threshold setting means sets the threshold based on the maximum peak value of said incoming signals selected in a previous cycle.

Chang teaches threshold setting means (116 in Fig.1) sets the threshold based on a correlation value information for said incoming signals selected in a previous cycle based on a maximum peak value ($n[k-1]$, note col.5, lines 56-58).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Chang in the threshold setting means of Ottosson for the purpose of setting a threshold value to a critical level without decreasing the threshold value (note col.5, lines 61-63), thus detecting the signals with higher correlation levels to ensure proper detection.

In regards to claims 4,12 and 20, although Ottosson does not explicitly teach wherein said signal selecting means selects signals that are signals of path locations different from path locations of said incoming signals selected in a previous cycle and that are equal to or above the threshold, it would have been

obvious to one skilled in the art at the time of the invention to analyze that the signal selecting means of Ottosson selects signals that are signals of path locations different from path locations of said incoming signals selected previously that are equal to or above the threshold (note co.17, lines 27-45 wherein different path locations or correlation times are updated depending on the threshold level). Thus, depending on the different path locations having a value with higher threshold level would be selected.

However, Ottosson does not teach wherein said threshold setting means sets the threshold based on a correlation value information for said incoming signals selected in a previous cycle.

Chang teaches threshold setting means (116 in Fig.1) sets the threshold based on a correlation value information for said incoming signals selected in a previous cycle ($n[k-1]$, note col.5, lines 56-58). Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Chang in the threshold setting means of Ottosson for the purpose of setting a threshold value to a critical level without decreasing the threshold value (note col.5, lines 61-63), thus detecting the signals with higher correlation levels to ensure proper detection.

In regards to claims 25,27 and 29, Ottosson does not explicitly teach wherein said predetermined condition is to detect the peak of said incoming signals at a certain path location for more than once.

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Chung teaches wherein said predetermined condition is to detect the peak (levels higher than the threshold, n_0 , see Fig.2 and note col.7, lines 13-28) of said incoming signals at a certain path location for more than once for the purpose of properly verifying the peaks without missing any peaks (Chang, note col.7, lines 57-67), thus increase reliability of the signal detection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam K. Ahn
7/7/05

TEMESGHEN GHEBRETISSAE
PRIMARY EXAMINER

7/8/05